Frequency swept diode-pumped single frequency Tm,Ho:$YLiF_4$ laser for spaceborne Doppler lidar

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Abstract:

Optical heterodyne experiments involving the photomixing of two single frequency, diode-pumped thulium holmium yttrium lithium fluoride lasers are described. Operated in external frequency stabilization loops, the lasers exhibit ± 1 MHz short term stability, and are photomixed and offset-locked at 140 MHz. Summation of sine wave modulation onto the PZT control voltage on one laser results in frequency swept operation over a continuous tuning range of ~160 MHz.